

**CLAIMS:**

1. A radio frequency identification (RFID) system comprising:  
an antenna that forms an electromagnetic field for communication with RFID tags,  
wherein the antenna has a substantially planar form; and  
a substantially-contiguous conductive shield positioned around the antenna and  
within a plane parallel to the antenna.
2. The RFID system of claim 1, wherein the conductive shield shapes the  
electromagnetic field to extend substantially in a direction perpendicular to the antenna,  
and prevents the electromagnetic field from forming substantially over the conductive  
shield.
3. The RFID system of claim 1, wherein the conductive shield comprises planar  
conductive regions oriented to form a non-shielded inner region, and further wherein the  
antenna is disposed within the non-shielded inner region and parallel to the planar  
conductive regions.
4. The RFID system of claim 3, wherein the conductive regions define at least one  
disconnect area that prevents the conductive shield from forming a closed conductive loop  
around the antenna
5. The RFID system of claim 3, wherein the antenna comprises one or more  
conductive loops including an outer loop, and the conductive regions of the conductive  
shield are located at least a distance  $D$  from an outer loop of the antenna that is selected  
based on a radius of the outer loop.
6. The RFID system of claim 3, wherein the antenna has a first conductive loop  
having a radius  $D1$  and a concentric second conductive loop having a radius  $D2$ , and the  
conductive regions of the conductive shield are located at least a distance  $D3$  from the  
outer loop, and wherein  $D3$  is selected as approximately the average of  $D1$  and  $D2$ .

7. The RFID system of claim 3, wherein each of the conductive regions have respective widths extending outward from the antenna, and further wherein the widths are selected based at least in part on a threshold level of the magnetic field necessary for RFID communication between the antenna and the RFID tags.
8. The RFID system of claim 7, wherein the widths are selected to extend sufficiently in directions parallel to and outward from the antenna to prevent the electromagnetic field from forming in or above the conductive regions until the strength of the magnetic field reduces to below the communication threshold.
9. The RFID system of claim 1, wherein the antenna and the conductive shield are mounted to a working surface of an RFID check-in / check-out area.
10. The RFID system of claim 9, wherein the working surface has a recessed area and a non-recessed area, and further wherein the antenna is mounted to the recessed area of the working surface and the conductive shield is mounted to the non-recessed area.
11. The RFID system of claim 1, wherein the conductive shield and the antenna are coplanar.
12. The RFID system of claim 1, wherein the conductive shield and the antenna are located in two different parallel planes.
13. The RFID system of claim 1, further comprising:
  - an RFID interrogation device coupled to the antenna, wherein the interrogation device interrogates the RFID tags to obtain information regarding associated articles; and
  - a computing device to process the information retrieved from the RFID interrogation device.
14. The RFID system of claim 1, wherein the antenna comprises a plurality of conductive loops to produce the electromagnetic field, and wherein the conductive loops

are spaced apart at least a distance  $D$  that is selected based on a dimension of the RFID tags with which the antenna communicates.

15. The RFID system of claim 14, wherein the distance  $D$  is selected to exceed a maximum dimension of the RFID tags.

16. The RFID system of claim 14, wherein the RFID tags have a dimension of length  $M$ , and the distance  $D$  between each of the plurality of conductive loops is selected such that  $D \geq M$ .